

Value Check

Substitute, simplify, and decide if the statement is true.

GRADE 7 • TEKS 7.11.B

7.11.B "determine if the given value(s) make(s) one-variable, two-step equations and inequalities true; and"

NAME _____

DATE _____

TEST THE GIVEN VALUE

Replace the variable with the given value. Then simplify both sides of an equation, or check whether the comparison in an inequality is true. If the result is true, the value is a solution.

WORKED EXAMPLE

Does $x = 7$ make $4x - 7 = 21$ true?

1. Substitute $x = 7$: $4(7) - 7 = 21$

2. Multiply: $28 - 7 = 21$

3. Simplify: $21 = 21$

Answer: Yes, $x = 7$ makes the equation true.

PRACTICE 6 problems

1 Does $x = 5$ make $3x + 2 = 17$ true?

ANSWER _____

2 Does $x = 6$ make $3x - 5 = 14$ true?

ANSWER _____

3 Does $x = -3$ make $2x + 9 = 3$ true?

ANSWER _____

4 Does $x = 8$ make $x/2 + 1 \leq 5$ true?

ANSWER _____

5 Does $x = 3$ make $6x - 5 > 20$ true?

ANSWER _____

6 Does $x = -2$ make $8x + 6 \geq -10$ true?

ANSWER _____

APPLY IT Show your work

- 1** An art club charges \$3 for a badge and \$2 for each sticker. Luis says that buying 6 stickers costs \$15. Is Luis correct?

WORK SPACE

ANSWER _____

- 2** A bike rental costs \$9 plus \$5 per hour. Sam has \$23 and says he can rent a bike for 3 hours. Is Sam correct?

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

Which value makes $-3x + 8 > 20$ true, $x = -6$ or $x = 2$? Explain your reasoning.

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	Does $x = 5$ make $3x + 2 = 17$ true?	Yes. $3(5) + 2 = 17$, so $17 = 17$.
2	Does $x = 6$ make $3x - 5 = 14$ true?	No. $3(6) - 5 = 13$, and 13 does not equal 14.
3	Does $x = -3$ make $2x + 9 = 3$ true?	Yes. $2(-3) + 9 = 3$, so $3 = 3$.
4	Does $x = 8$ make $x/2 + 1 \leq 5$ true?	Yes. $8/2 + 1 = 5$, and $5 \leq 5$.
5	Does $x = 3$ make $6x - 5 > 20$ true?	No. $6(3) - 5 = 13$, and 13 is not greater than 20.
6	Does $x = -2$ make $8x + 6 \geq -10$ true?	Yes. $8(-2) + 6 = -10$, and $-10 \geq -10$.

PART 2 • APPLY IT

- Yes, Luis is correct.** Use $2s + 3 = 15$ and substitute $s = 6$. Since $2(6) + 3 = 15$, the statement is true.
- No, Sam is not correct.** Use $5h + 9 \leq 23$ and substitute $h = 3$. The cost is $5(3) + 9 = 24$, and 24 is not less than or equal to 23.

CHALLENGE

Only $x = -6$. When $x = -6$, $-3(-6) + 8 = 26$, and $26 > 20$. When $x = 2$, $-3(2) + 8 = 2$, and $2 > 20$ is false.

Accept equivalent substitution work and correct true or false decisions. For inequalities, accept language such as greater than or equal to when the comparison is checked correctly.